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L8: Entry 3 of 12

File: USPT

Jul 11, 2000

US-PAT-NO: 6088722

DOCUMENT-IDENTIFIER: US 6088722 A

**\*\* See image for Certificate of Correction \*\***

TITLE: System and method for scheduling broadcast of and access to video programs  
and other data using customer profiles

DATE-ISSUED: July 11, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Herz; Frederick	Canaan Valley, Davis	WV	26260	
Ungar; Lyle	Philadephia	PA	19103	
Zhang; Jian	Cherry Hill	NJ	08002	
Wachob; David	Elkins Park	PA	19027	
Salganicoff; Marcos	Phiadelphia	PA	19130	

APPL-NO: 08/ 849589 [PALM]

DATE FILED: December 24, 1997

## PARENT-CASE:

CROSS-REFERENCE TO RELATED APPLICATIONS The present application is a continuation-in-part application of U.S. patent application Ser. No. 08/346,425, filed Nov. 29, 1994 now U.S. Pat. No. 5,758,257.

## PCT-DATA:

APPL-NO	DATE-FILED	PUB-NO	PUB-DATE	371-DATE	102(E)-DATE
PCT/US95/15429	November 29, 1995	WO96/17467	Jun 6, 1996	Dec 24, 1997	Dec 24, 1997

INT-CL: [07] H04 N 7/10, H04 N 7/14, H04 N 7/173, H04 H 1/02

US-CL-ISSUED: 709/217; 348/1, 348/7, 348/10, 348/12, 455/2, 455/5.1, 455/6.2

US-CL-CURRENT: 709/217; 725/46

FIELD-OF-SEARCH: 395/200.47-200.49, 455/2, 455/4.1, 455/4.2, 455/5.1, 455/6.2,  
380/6-8, 380/10, 380/11-20, 380/21, 348/1, 348/6, 348/7, 348/10, 348/12, 348/13,  
348/906, 348/2

## PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected

Search ALL

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	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	<u>4170782</u>	October 1979	Miller	358/84
<input type="checkbox"/>	<u>4264924</u>	April 1981	Freeman	358/86
<input type="checkbox"/>	<u>4381522</u>	April 1983	Lambert	358/86
<input type="checkbox"/>	<u>4694490</u>	September 1987	Harvey et al.	380/20
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<input type="checkbox"/>	<u>4706121</u>	November 1987	Young	358/142
<input type="checkbox"/>	<u>4745549</u>	May 1988	Hashimoto	364/402
<input type="checkbox"/>	<u>4751578</u>	June 1988	Reiter et al.	358/183
<input type="checkbox"/>	<u>4870579</u>	September 1989	Hey	364/419
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<input type="checkbox"/>	<u>4977455</u>	December 1990	Young	358/142
<input type="checkbox"/>	<u>4996642</u>	February 1991	Hey	364/419
<input type="checkbox"/>	<u>5003591</u>	March 1991	Kauffman et al.	380/10
<input type="checkbox"/>	<u>5075771</u>	December 1991	Hashimoto	358/84
<input type="checkbox"/>	<u>5109414</u>	April 1992	Harvey et al.	380/9
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<input type="checkbox"/>	<u>5223924</u>	June 1993	Strubbe	358/86
<input type="checkbox"/>	<u>5230020</u>	July 1993	Hardy et al.	380/21
<input type="checkbox"/>	<u>5233654</u>	August 1993	Harvey et al.	380/20
<input type="checkbox"/>	<u>5237157</u>	August 1993	Kaplan	235/375
<input type="checkbox"/>	<u>5245420</u>	September 1993	Harney et al.	348/7
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<input type="checkbox"/>	<u>5483278</u>	January 1996	Strubbe et al.	348/7
<input type="checkbox"/>	<u>5534911</u>	July 1996	Levitan	348/1
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Lambert, "Personalized Mass Media Corp. Seeks Patent Partners," Cable Technologies,

Nov. 30, 1993.

Moss, "ADcom Starts Cable-Meter Rollout in California," Multichannel News, Apr. 25, 1994, p. 34.

Otis Port, "Wonder Chips--How They'll Make Computing Power Ultrafast and Ultracheap," Business Week, Jul. 4, 1994, pp. 86-92.

Jonathan Berry, "A Potent New Tool for Selling Database Marketing," Business Week, Sep. 5, 1994, pp. 34-40.

William L. Thomas, "Electronic Program Guide Applications--The Basics of System Design," 1994 NCTA Technical Papers, pp. 15-20.

Judith H. Irven et al., "Multi-Media Information Services: A Laboratory Study," IEEE Communications Magazine, vol. 26, No. 6, Jun., 1988, pp. 24-44.

ART-UNIT: 271

PRIMARY-EXAMINER: Miller; John W.

ATTY-AGENT-FIRM: Woodcock Wasburn Kurtz Mackiewicz & Norris LLP

ABSTRACT:

A system and method for scheduling the receipt of desired movies and other forms of data from a network, which simultaneously distributes many sources of such data to many customers, as in a cable television system. Customer profiles are developed for the recipient describing how important certain characteristics of the broadcast video program, movie, or other data are to each customer. From these profiles, an "agreement matrix" is calculated by comparing the recipient's profiles to the actual profiles of the characteristics of the available video programs, movies, or other data. The agreement matrix thus characterizes the attractiveness of each video program, movie, or other data to each prospective customer. "Virtual" channels are generated from the agreement matrix to produce a series of video or data programming which will provide the greatest satisfaction to each customer. Feedback paths are also provided so that the customer's profiles and/or the profiles of the video programs or other data may be modified to reflect actual usage, and so that the data downloaded to the customer's set top terminal may be minimized. Kiosks are also developed which assist customers in the selection of videos, music, books, and the like in accordance with the customer's objective profiles.

27 Claims, 11 Drawing figures

*not give a score  
to a customer*

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File: USPT

Jul 11, 2000

DOCUMENT-IDENTIFIER: US 6088722 A

**\*\* See image for Certificate of Correction \*\***

TITLE: System and method for scheduling broadcast of and access to video programs and other data using customer profiles

Abstract Text (1):

A system and method for scheduling the receipt of desired movies and other forms of data from a network, which simultaneously distributes many sources of such data to many customers, as in a cable television system. Customer profiles are developed for the recipient describing how important certain characteristics of the broadcast video program, movie, or other data are to each customer. From these profiles, an "agreement matrix" is calculated by comparing the recipient's profiles to the actual profiles of the characteristics of the available video programs, movies, or other data. The agreement matrix thus characterizes the attractiveness of each video program, movie, or other data to each prospective customer. "Virtual" channels are generated from the agreement matrix to produce a series of video or data programming which will provide the greatest satisfaction to each customer. Feedback paths are also provided so that the customer's profiles and/or the profiles of the video programs or other data may be modified to reflect actual usage, and so that the data downloaded to the customer's set top terminal may be minimized. Kiosks are also developed which assist customers in the selection of videos, music, books, and the like in accordance with the customer's objective profiles.

Application Filing Date (1):

19971224

Brief Summary Text (10):

The system described by Herz et al. in U.S. Pat. No. 5,351,075 partially addresses the above problems, at least with respect to the provision of movies over cable television. As described therein, members of a "Home Video Club" select the video programs they would like to see in the following week. A scheduling computer receives the members' inputs for the current week and determines the schedule for the following week based upon the tabulated preferences. This schedule is then made available to the members of the Home Video Club. If, when, and how often a particular video program is transmitted is determined by the customer preferences received by the scheduling computer. Prime time viewing periods are used to make certain that the most popular video programs are broadcast frequently and at the most desirable times. As with the aforementioned systems, the "Home Video Club" system does not automatically broadcast the most desired video programs to the customers but instead requires the active participation of the customers to "vote" for the most desired video programs for subsequent viewing.

Brief Summary Text (14):

For the reasons noted above, feedback regarding the customer programming and purchasing preferences is highly desirable. It is highly desirable to develop a technique for better acquiring and quantifying such customer video programming and purchasing preferences. Along these lines, Strubbe recently described a system in U.S. Pat. No. 5,223,924 which provides an interface for automatically correlating the customer preferences with the television program information and then creating

and displaying a personalized customer program database from the results of the correlation. In the Strubbe system, the customer specifies whether he or she "likes" a particular video program and the database is updated accordingly. Then, from the video programs "liked" by the customer, a second, personalized, database is created. However, as with each of the systems described above, the Strubbe system does not develop customer profiles and automatically update the database of "liked" videos using feedback. Also, Strubbe does not teach that the preference information may be used to predict what new video programs the customer may like and then schedule those new video programs for viewing.

Brief Summary Text (18):

In accordance with the invention, a method of scheduling customer access to data from a plurality of data sources is provided. Although the technique of the invention may be applied to match customer profiles for such disparate uses as computerized text retrieval, music and music video selection, home shopping selections, infomercials, and the like, in the presently preferred embodiment, the method of the invention is used for scheduling customer access to video programs and other broadcast data. In accordance with the preferred method, objective customer preference profiles are obtained and compared with content profiles of the available video programming. The initial customer profiles are determined from customer questionnaires, customer demographics, relevance feedback techniques, default profiles, and the like, while the initial content profiles are determined from questionnaires completed by "experts" or some sort of customer's panel, are generated from the text of the video programs themselves, and/or are determined by adopting the average of the profiles of those customers who actually watch the video program. Based on the comparison results, one or more customized programming channels are created for transmission, and from those channels, each customer's set top multimedia terminal may further determine "virtual channels" containing a collection of only those video programs having content profiles which best match the customer's profile and hence are most desirable to the customer during the relevant time frame.

Brief Summary Text (21):

In the presently preferred embodiment of the invention, the agreement matrix determining step comprises the step of comparing the customer profiles with the content profiles for each video program available for viewing in a predetermined time period. In particular, the agreement matrix determining step preferably comprises the step of determining a distance in multidimensional characteristic space between a customer profile and a content profile by calculating an agreement scalar for common characteristics,  $ac$ , between the customer profile,  $cv$ , and the content profiles,  $cp$ , in accordance with the relationship:

Brief Summary Text (22):

for  $i$ =a particular customer of a number of customers  $I$ ,  $j$ =a particular video program of a number of video programs  $J$ , and  $k$ =a particular video program characteristic of a number of video program characteristics  $K$ , where  $W_{sub.ik}$  is customer  $i$ 's weight of characteristic  $k$ . As will be appreciated by those skilled in the art, an agreement matrix so defined is the reciprocal of the distance  $d$  ( $=1/ac$ ) in multi-dimensional space between the customer profile vector and the content profile vector and that many different distance measurement techniques may be used in determining the distance  $d$ . In such an embodiment, the subset determining step preferably comprises the steps of sorting the video programs in an order of  $ac$  indicating increasing correlation and selecting as the subset a predetermined number of the video programs having the values for  $ac$  indicating the most correlation.

Drawing Description Text (13):

FIG. 11 is a simplified block diagram of a computer kiosk or personal computer which uses the profile and clustering techniques of the invention to assist a customer in the selection of videos for rental, music or books for purchase, and

the like.

Detailed Description Text (8):

In accordance with the preferred embodiment of the invention, the content profiles describe the contents of video programs and are compared mathematically in a computer to customer profiles to generate an agreement matrix which establishes the degree of correlation between the preferences of the customer or customers and the video programming available during each video programming time slot. The content profiles and the customer profiles are thus described as a collection of mathematical values representing the weighted significance of several predetermined characteristics of the video programming. For ease of description, the present inventors will describe the mathematical basis for the content profiles and the customer profiles in this section and will describe the generation of the agreement matrix and the uses of the agreement matrix in the next section.

Detailed Description Text (92):

Given the weight matrix and the characteristic profiles of the customers and the programs, the agreement matrix may be calculated. For example, the agreement scalar between customer 1 and program 2 is: ##EQU8##

Detailed Description Text (95):

Of course, in the simple case where merely the presence or absence of particular characteristics are measured, the agreement matrix would look for identity in the most categories rather than the distance between the customer profile vector and the content profile vector using the techniques described above.

Detailed Description Text (153):

Thus far, the invention has been described in the context of a "filtering" system in which all of the video programming available at the head end is scheduled on "customized" channels in accordance with the customer profiles of customers and in which a subset of the programming on the "customized" channels available to each customer is selected using an agreement matrix for presentation to the customer as "virtual channels" tailored to that customer's characteristic profiles. However, one of the more interesting applications of the above-mentioned customer profile system is that the same customer profiling system may be used to provide feedback from individual customers regarding what characteristics they find most desirable in the broadcast shows. By obtaining this information, the customer profiles may be appropriately updated as described above. As will now be described, the video programming schedules also may be updated to reflect the customers' actual preferences, and information may be combined with the customer demographics and customer profiles to provide targeted advertising and targeted shop at home opportunities for the customer.

Detailed Description Text (225):

By using clustering techniques, one can also determine an initial customer profile even if no history of the customer's preferences is available. In particular, by clustering customers based on demographic or psychographic data, new customers may be assigned customer profiles typical of customers with similar demographics or psychographics. On the other hand, when no characteristics are known for movies or customers, an agreement matrix indicating which movies each customer is likely to watch may be computed from a record of which movies each customer has already watched. As described above, this agreement matrix can be used for selecting a set of virtual channels for each customer, for scheduling movies for delivery over a cable or equivalent transmission system, and for making movie rental or other rental or purchase recommendations at a kiosk or personal computer (described below). The key to generating the agreement matrix using this approach is the observation that if two people have liked many of the same movies or shows in the past, then they are likely to continue to like similar movies or shows. More precisely, if a person "A" has seen and liked many movies or shows which a second person "B" has seen and liked, then "A" is likely to like other movies or shows

which "B" liked. The method set forth below generalizes this concept to multiple customers.

Detailed Description Text (251):

In the embodiments of FIGS. 5 and 6, the return path from each remote customer's multimedia terminal to the data collection mechanism at the CATV head end is preferably provided through the telephone network. Such techniques are currently employed in CATV systems for collection of the Pay-Per-View purchasing information to ascertain billing by customers. As in those systems, a telephone interface (FIG. 10) is provided at each customer location, which is, in turn, connected to the multimedia terminal's microprocessor to facilitate information transfer between the multimedia terminal's memory and the CATV head end. As will be described below with respect to FIG. 10, the memory of the multimedia terminal includes relevant profile information and/or specific viewing/purchasing detail records for any and all customer(s) at that remote customer location.

Detailed Description Text (282):

It has also been suggested above that clustering techniques may be used to provide a relatively homogeneous population with targeted advertising. What is significant about the invention in this context is that the agreement matrix may be updated based on feedback including actual purchases made by the customer in response to such targeted advertising. For example, when shopping at home using infomercials, as when watching a movie, the products available for purchase can be characterized using different attributes and an agreement matrix formed between customer profiles and product profiles. The agreement matrix can also be used to select infomercials or other advertisements that the customer is most likely to watch and to respond to by making purchases. If purchase information is available, the customer profiles can be updated using the same algorithm described above with respect to video programs, but now the updating is based on what the customer actually purchased as well as what infomercials he or she watched.

Detailed Description Text (283):

The clustering method of the invention may also be modified to include sociodemographic profiles of customers. Such information may include ages, gender, and race, as well as other information provided by the customers themselves. On the other hand, the clustering data may include census data such as zip code data. For example, as noted above, a zip code may be used as one way to categorize the customer profiles of the customers whereby a new customer to a system would get one or more of a number of generic customer profiles for a particular zip code as his or her initial customer profile. The initial customer profile would then be modified as that customer's viewing habits are established. As noted above, such modifications may be accomplished using psychographic data, customer preference profiles input directly by the customer, past movie selections, rave reviews, passive feedback based on actual television viewing by that customer, records of customer purchases, and the like.

Detailed Description Text (291):

The methods of the invention may be implemented in a kiosk or personal computer as illustrated in FIG. 11 for use in a video, music and/or book store to help customers decide which videos to rent or music and books to buy. The kiosk or personal computer would be similar in structure to the kiosk disclosed in U.S. Pat. No. 5,237,157 to Kaplan and would include a microprocessor 1102. However, a kiosk or personal computer implemented in accordance with the invention also accepts identity information from the customers either via keyboard 1104 or by electronic reading of a membership card by an electronic card reader (not shown) and retrieves customer profiles for that customer from memory 1106 for use in forming an agreement matrix as described above. Those skilled in the art will appreciate that, unlike the broadcast embodiment above, it is necessary in the kiosk embodiment to match the customer profiles to individuals by name or user ID rather than time slot. Such values are provided via keyboard 1104 or an electronic card reader so

that the customer profiles for that customer may be retrieved.

Detailed Description Text (293):

The profiling technique of the invention also forms the basis for a customer to select a movie by example, as in a "rave review" described above. As described in Section V.B. above, since customers often do not have existing profiles, new customers may create an initial customer profile by selecting one or movies which are similar to what he or she is looking for so that the profiles of these sample movies may be looked up and averaged to provide a customer profile. This customer profile is used in combination with a standard set of weights to establish the importance of the characteristics to generate an agreement matrix indicating how much the customer should like each movie which is now available. The 3 to 5 movies (or 10 movies) with the highest agreement (maximum value for ac) are then presented to the customer via video processor 1108 for display on display device 1110 along with brief descriptions. As above, movies can be excluded which the customer has recently rented. As shown in FIG. 11, a CD ROM player 1112 may also be provided at the kiosk to facilitate the playing of short "clips" of the movies with the highest agreement to further assist the customer in his or her final selection.

Detailed Description Text (296):

Music kiosks and book kiosks could also be used in music and/or book stores to aid in the selection of music or books for purchase. Unlike the kiosks described in the Kaplan '157 patent, however, the kiosks would allow potential purchasers to look up music or book selections by example and would match the customer's preferences to the characteristics of the available inventory. The potential buyer could listen to segments of those music selections or review the summaries and reviews of those books with the highest agreement to the customer profile created from the sample music or book selections.

Detailed Description Text (300):

In the case of retrieving stock market data from a computer network, response times for retrieving certain stock market data can be shortened by anticipating which menu selections the customer is likely to use and downloading that information in anticipation of its likely use. One particularly useful example of this would be the retrieval of information about stocks such as recent trade prices and volumes. Since stocks, like movies, can be characterized in multiple ways, such as by industry, dividend size, risk, cost, where traded, and the like, profiles of stock may be developed in a similar manner to that described above. The stocks also can be characterized by whether they are owned by the customer and by whether they have exhibited unusual recent activity. These characteristics can be used to create profiles and agreement matrices using the identical techniques described above. In addition, if a customer exhibits a pattern in their request for information about stocks, their requests can be anticipated and menus assembled to ease selection of the stocks so as to avoid potentially long searches through multiple windows, or the

Detailed Description Text (303):

Also, media cross-correlation is also possible using the techniques of the invention by using the profile from one media to estimate the customer preference for another media. Such an approach might be useful, for example, to predict that an avid customer of sports programs could also be very interested in obtaining sports or news information or information regarding the purchase of sports memorabilia based on his or her viewing preferences. Likewise, listeners of a particular type of music may also be interested in purchasing concert tickets for the same or similar types of music.

Detailed Description Text (304):

Finally, the techniques of the invention may be used to match a potential purchaser to real estate on the market by creating profiles of the characteristic features of a house such as size, location, costs, number of bedrooms, style, and the like. The



potential purchaser can request his or her "dream home" by giving example houses, by specifying desired characteristics such as range of prices, or by a combination of the two. The agreement matrix would match the customer's profiles to the profiles of the available homes and create an agreement matrix. The system could also verify that the profiles initially entered by the potential purchasers are accurate by suggesting houses of a somewhat different type than those the customer has requested. A house retrieval system which is customer controlled could also be developed using the techniques of the invention. In this example, the data source would be the standardized real estate listings.

Other Reference Publication (4):

Jonathan Berry, "A Potent New Tool for Selling Database Marketing," Business Week, Sep. 5, 1994, pp. 34-40.

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File: USPT

Feb 5, 2002

DOCUMENT-IDENTIFIER: US 6344172 B1  
TITLE: Protein chromatography system

Application Filing Date (1):  
19941103

Detailed Description Text (3):

FIG. 1 is a drawing of a commercial embodiment of the invention, which shows the protein separation apparatus of the invention substantially enclosed in a housing, along with a computer keyboard, mouse, and terminal in which data is collected and stored, and in which program control sequences are stored and executed.

Detailed Description Text (45):

One can increase chromatographic throughput in the chromatography system of the invention by using a matrix comprising small porous particles having a relatively large pore diameter, so that convective flow can be induced through, as well as around, the particles. This type of chromatography is referred to as Perfusive Chromatography and is described in copending application Ser. No. 376,885, filed Jul. 6, 1989, now U.S. Pat. No. 5,019,220 the disclosure of which is incorporated herein by reference. Perfusive chromatographic techniques permit high speed, high capacity, high resolution separation. Perfusive matrices may be purchased from PerSeptive Biosystems, Inc. of Cambridge, Mass.

Detailed Description Text (113):

The chromatography system of the invention may be used for detecting differences in the structural profile of a protein in separate samples. The phrase "structural profile", or "fingerprint", as used herein, refers to the particular mix of molecular species in a protein solution, which can vary from batch to batch or over time due to expression errors, truncation by proteases, or differences in post translation modification resulting in variations in conformation or derivatization. Thus, the sample may be passed through a matrix comprising immobilized binding sites which vary with respect to their binding properties and structural variants in the sample. For example, polyclonal antibodies may be used, cloned variants of which are specific for a particular epitope on a particular variant of the protein. Alternatively, a single type of binding site may be used which varies in binding affinity or specificity with variants of the protein to be analyzed. This procedure can produce a breakthrough function characteristic of the structural profile of the protein in the sample as the concentration of protein exiting the matrix is measured after at least some of the binding sites have been saturated with the protein. Comparing the characteristic functions of different samples permits indirect comparison of their structural makeup.

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L8: Entry 1 of 12

File: USPT

Sep 24, 2002

US-PAT-NO: 6457010

DOCUMENT-IDENTIFIER: US 6457010 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Client-server based subscriber characterization system

DATE-ISSUED: September 24, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
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Sylla, M. Lamine	New Britain	PA		

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Expanse Networks, Inc.	Doylestown	PA			02

APPL-NO: 09/ 205653 [PALM]

DATE FILED: December 3, 1998

INT-CL: [07] G06 F 17/00, G06 F 17/30

US-CL-ISSUED: 707/10; 707/102, 705/14, 725/14

US-CL-CURRENT: 707/10; 705/14, 707/102, 725/14

FIELD-OF-SEARCH: 707/102, 707/10, 707/1, 707/2, 345/327, 348/10, 725/10, 725/14, 705/14

PRIOR-ART-DISCLOSED:

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	<u>6055510</u>	April 2000	Henrick et al.	705/14

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<input type="checkbox"/> <u>6160570</u>	December 2000	Sitnik	348/1
<input type="checkbox"/> <u>6160989</u>	December 2000	Hendricks et al.	455/4.2
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<input type="checkbox"/> <u>6286005</u>	September 2001	Cannon	707/100
<input type="checkbox"/> <u>6327574</u>	December 2001	Kramer et al.	705/14

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
2286243	April 2001	CA	
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2348346	September 2000	GB	
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9904561	January 1999	WO	
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IEEE Publication ""Goodies" in exchange for consumer information on the internet: economics and issues", by Chang, A.M., Kannan, P.K. and Whinston, A.B., Jan. 1998, 12 pages.

"AdForce Introduces AdForce Everywhere: Advertising, Marketing & Promotions wherever a Digital Signal Can be Sent", by Business Wire, Mar. 27, 2000 (3pp.).

"The AdForce professional management team, composed of seasoned high technology and Internet executives, is unique in the field of Internet advertising management.", by AdForce Co., Mar. 27, 2000. (5 pp.).

"AdForce Strategic Partners", by AdForce Co., Mar. 27, 2000. (3 pp.).

"Data Structures: From Arrays to Priority Queues", by Wayne Amsbury, Wadsworth Publishing Company, 1985, pp. 228, 332 and 333. (3pp.).

IEEE Publication "A Framework for Targeting Banner Advertising on the Internet", by Gallagher, K. and Parsons, J., Jan. 1997, 12 pages.

ART-UNIT: 2171

PRIMARY-EXAMINER: Metjahic; Safet

ASSISTANT-EXAMINER: Le; Uyen

ATTY-AGENT-FIRM: Ryder; Douglas J.

ABSTRACT:

A subscriber characterization system is presented in which the subscriber's requests are transmitted to a server which fulfills those requests and performs monitoring of the subscriber requests for subsequent characterization of the subscriber. Monitoring includes maintaining records of the time duration programming is watched, the volume at which the programming is listened to, and any available information regarding the type of programming, including category and sub-category of the programming. The characterization system works across a network to extract textual information related to the programming from closed captioning data, electronic program guides, or other text sources associated with the programming. The extracted information is used to form program characteristics vectors. The programming characteristics vectors can be used in combination with the subscriber selection data to form a subscriber profile. Heuristic rules indicating the relationships between programming choices and demographics can be applied to generate additional probabilistic information regarding demographics and programming and product interests. The probabilistic information can be accessed at the server by other entities on the network.

48 Claims, 25 Drawing figures

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File: USPT

Sep 24, 2002

DOCUMENT-IDENTIFIER: US 6457010 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Client-server based subscriber characterization system

Application Filing Date (1):  
19981203Brief Summary Text (5):

In order to deliver more targeted programming and advertising to subscribers, it is necessary to understand their likes and dislikes to a greater extent than is presently done today. Systems which identify subscriber preferences based on their purchases and responses to questionnaires allow for the targeted marketing of literature in the mail, but do not in any sense allow for the rapid and precise delivery of programming and advertising which is known to have a high probability of acceptance to the subscriber. In order to determine which programming or advertising is appropriate for the subscriber, knowledge of that subscriber and the subscriber product and programming preferences is required.

Brief Summary Text (15):

One advantage of the present invention is that it allows consumers the possibility to permit access to probabilistic information regarding their household demographics and programming/product preferences, without revealing their specific viewing history. Subscribers may elect to permit access to this information in order to receive advertising which is more targeted to their likes/dislikes. Similarly, a subscriber may wish to sell access to this statistical data in order to receive revenue or receive a discount on a product or a service.

Detailed Description Text (4):

The present invention is directed at an apparatus for generating a subscriber profile which contains useful information regarding the subscriber likes and dislikes. Such a profile is useful for systems which provide targeted programming or advertisements to the subscriber, and allow material (programs or advertisements) to be directed at subscribers who will have a high probability of liking the program or a high degree of interest in purchasing the product.

Detailed Description Text (26):

The monitoring system depicted in FIG. 2 is responsible for monitoring the subscriber activities, and can be used to realize the SCS 100. In a preferred embodiment, the monitoring system of FIG. 2 is located in a television set-top device or in the television itself. In an alternate embodiment, the monitoring system is part of a computer which receives programming from a network.

Detailed Description Text (61):

In an alternate embodiment, the heuristic rules 160 are applied to both the subscriber selection data 110 and the program characteristics vectors 150 to generate the household session demographic data 1310 and the household session interest profile 1320. In this embodiment, weighted averages of the program characteristics vectors 150 are formed based on the subscriber selection data 110, and the heuristic rules 160 are applied. In the case of logical heuristic rules as shown in FIG. 10A, logical programming can be applied to make determinations

regarding the household session demographic data 1310 and the household session interest profile 1320. In the case of heuristic rules in the form of conditional probabilities such as those illustrated in FIG. 10B, a dot product of the time averaged values of the program characteristics vectors can be taken with the appropriate matrix of heuristic rules to generate both the household session demographic data 1310 and the household session interest profile 1320.

Detailed Description Text (70):

Although the present invention has been largely described in the context of a single computing platform receiving programming, the SCS 100 can be realized as part of a client-server architecture, as illustrated in FIG. 18. Referring to FIG. 18, residence 1800 contains a personal computer (PC) 1820 as well as the combination of a television 1810 and a set-top 1808, which can request and receive programming. The equipment in residence 1800, or similar equipment in a small or large business environment, forms the client side of the network as defined herein. Programming is delivered over an access network 1830, which may be a cable television network, telephone type network, or other access network. Information requests are made by the client side to a server 1840 which forms the server side of the network. Server 1840 has content locally which it provides to the subscriber, or requests content on behalf of the subscriber from a third party content provider 1860, as illustrated in FIG. 18. Requests made on behalf of the client side by server 1840 are made across a wide area network 1850 which can be the Internet or other public or private network. Techniques for making requests on behalf of a client are frequently referred to as proxy techniques and are well known to those skilled in the art. The server side receives the requested programming which is displayed on PC 1820 or television 1810 according to which device made the request.

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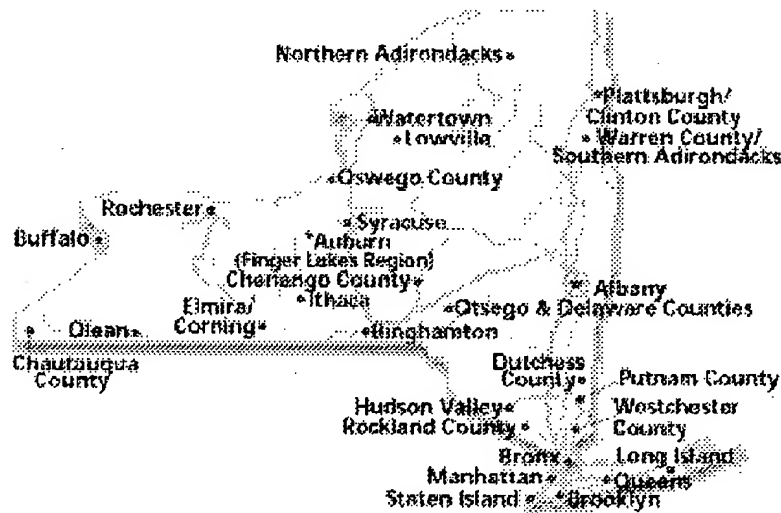
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☐ 1. Document ID: US 6675149 B1

Using default format because multiple data bases are involved.

L11: Entry 1 of 8

File: USPT

Jan 6, 2004

US-PAT-NO: 6675149

DOCUMENT-IDENTIFIER: US 6675149 B1 ✓

TITLE: Information technology project assessment method, system and program product

DATE-ISSUED: January 6, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ruffin; Michael	Calumet Park	IL		
Temple, III; Joseph L.	Hurley	NY		
Ordonez; Carlos A.	Poughkeepsie	NY		
Yan; Eva L.	Hyde Park	NY		
Preston; Allen H.	Poughkeepsie	NY		
Morrison; Timothy I.	Tillson	NY		

US-CL-CURRENT: 705/8

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw. De
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☐ 2. Document ID: US 6526387 B1

L11: Entry 2 of 8

File: USPT

Feb 25, 2003

US-PAT-NO: 6526387

DOCUMENT-IDENTIFIER: US 6526387 B1

TITLE: Method, system and program product for determining the value of a proposed technology modification

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw. De
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☐ 3. Document ID: US 6272467 B1 ✓

L11: Entry 3 of 8

File: USPT

Aug 7, 2001

US-PAT-NO: 6272467

DOCUMENT-IDENTIFIER: US 6272467 B1

TITLE: System for data collection and matching compatible profiles

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	FIGS	Draw De
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☐ 4. Document ID: US 6269339 B1

L11: Entry 4 of 8

File: USPT

Jul 31, 2001

US-PAT-NO: 6269339

DOCUMENT-IDENTIFIER: US 6269339 B1

TITLE: System and method for developing and selecting a customized wellness plan

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	FIGS	Draw De
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☐ 5. Document ID: US 6219654 B1

L11: Entry 5 of 8

File: USPT

Apr 17, 2001

US-PAT-NO: 6219654

DOCUMENT-IDENTIFIER: US 6219654 B1

TITLE: Method, system and program product for performing cost analysis of an information technology implementation

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	FIGS	Draw De
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☐ 6. Document ID: US 5937387 A

L11: Entry 6 of 8

File: USPT

Aug 10, 1999

US-PAT-NO: 5937387

DOCUMENT-IDENTIFIER: US 5937387 A

TITLE: System and method for developing and selecting a customized wellness plan

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	FIGS	Draw De
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☐ 7. Document ID: US 5848396 A

L11: Entry 7 of 8

File: USPT

Dec 8, 1998

US-PAT-NO: 5848396

DOCUMENT-IDENTIFIER: US 5848396 A

TITLE: Method and apparatus for determining behavioral profile of a computer user

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Claims	Drawings	Drawings
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☐ 8. Document ID: US 5592375 A

L11: Entry 8 of 8

File: USPT

Jan 7, 1997

US-PAT-NO: 5592375

DOCUMENT-IDENTIFIER: US 5592375 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Computer-assisted system for interactively brokering goods or services  
between buyers and sellers

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Claims	Drawings	Drawings
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L8: Entry 5 of 12

File: USPT

Feb 16, 1999

DOCUMENT-IDENTIFIER: US 5872979 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Method and system for removing software involving shared files

Application Filing Date (1):  
19950104

Brief Summary Text (5):

In todays data processing systems, programs, also referred to as "software programs" are constantly installed and removed from data processing systems. Multiple reasons exist for removing a software program after it has been installed and configured. For example, incompatibilities with other installed and configured programs, poor performance, unexpected run time results, work station configuration changes, are all valid reasons for removing an installed and configured software program from a user's computer. Some software programs that are installed/configured; add to, delete from, or modify one or more files which are shared with other installed/configured software programs. These conditions create inter-program dependencies.

Drawing Description Text (6):

FIG. 3 is a high level flowchart of a process for removing programs from a computer depicted in accordance with a preferred embodiment of the present invention;

Detailed Description Text (9):

In normal use, personal computer system 110 can be designed to give independent computing power to a small group of users as a server or a single user and is inexpensively priced for purchase by individuals or small businesses. In operation, the system processor functions under an operating system, such as IBM's OS/2 operating system or DOS. OS/2 is a registered trademark of International Business Machines Corporation. This type of operating system includes a Basic Input/Output System (BIOS) interface between the I/O devices and the operating system. BIOS, which can be stored in a ROM on a motherboard or planar, includes diagnostic routines which are contained in a power on self test section referred to as POST.

Detailed Description Text (17):

In a distributed data processing system, a program may be removed from a computer, such as a work station within the distributed data processing system, utilizing a manager program in a server or base computer system in accordance with a preferred embodiment of the present invention. In a single computer data processing system, the management program is located within that data processing system. Such a program management system tracks new, changed, and deleted files.

Detailed Description Text (18):

With reference now to FIG. 3, a block diagram of software components involved in product removal are depicted in accordance with a preferred embodiment of the present invention. Manager 300 is utilized to remove or restore programs, such as programs 302a and 302b within a data processing system such as those depicted in FIGS. 1, 2A, and 2B. Manager 300 employs base file profile 304 and shared file profile 303a to remove or restore program 302a from a data processing system. Program 303b may be removed or restored using shared file profile 303b. Programs

302a and 302b share file 308. A vase profile contains the syntax and remove/restore rules for particular statement type appearing in a particular shared file. A shared file profile contains the list of requirements/dependencies that a particular product specifies for a particular shared file. To remove program 302a, shared file 308 may need to be altered to remove changes made by program 302a while honoring shared file 308's dependencies defined in program 302b's shared file profile. In a distributed data processing system, such as that depicted in FIG. 1, manager 300, base file profile 304, and shared file profiles 303a and 303b may be located in a server or base computer system within the distributed data processing system while programs 302a and 302b are located in a local system, such as a work station, in accordance with a preferred embodiment of the present invention. In the event that such a system is utilized on a single computer data processing system, all components would be found within that data processing system.

Detailed Description Text (19):

With reference to FIG. 4, a high level flowchart of a traditional process for removing programs from a computer. The process begins by deleting new files (step 400). Thereafter, files that had been changed by the installation of the program that is to be removed are restored to their prior state (step 402). Thereafter, files deleted when the program was installed are restored (step 404).

Detailed Description Text (21):

The various types of statements comprising a shared file are classified and described in a manner such that when a program is removed from or restored to a data processing system, each changed shared file entity (e.g. a statement) may be modified correctly. For example, for files like CONFIG.SYS found in OS/2 and MS-DOS, a matrix of statement characteristics (a file profile) may be defined that describes each statements syntax, whether limiting values apply to removed and/or restored statements types, removal rules for different statement types, etc. In a general sense, the syntax of a shared file entity describes how it looks. That is; its punctuation, whether its alphameric, numeric, computational, etc. Program removal and restoration may then be driven by the file profile rules that are associated with various shared filed statement types in accordance with a preferred embodiment of the present invention.

Detailed Description Text (27):

The various types of statements that comprise a shared file must be classified and described in a manner such that when a particular program is removed or restored, the correct action may be taken. For files like CONFIG.SYS, a matrix of statement characteristics (a base file profile) can be defined through an API found within a manager 300, as illustrated in FIG. 3. In conjunction with this base file profile, a particular program's actual installation and configuration requirements may be derived by monitoring the before and after state of a shared file for a particular program. This procedure is contrasted to a specific API (i.e. DEPEND) that explicitly identifies a program's installation and configuration requirements for removal and restoration. Thereafter, program removal and restoration is driven by the file profile rules originating from a particular shared file's base file profile (only one per shared file) and shared file profiles (one per program modifying or referencing a particular shared file) associated with each installed/configured program.

Detailed Description Text (142):

With reference to FIG. 5, a flowchart of a process for defining shared files associated with a particular program in accordance with a preferred embodiment of the present invention. With each shared file is a profile definition and a list of requirements for this program. The program can be removed or restored. The process begins by receiving a program for installation (step 500). A determination of whether DEFINE and DEPEND statements were shipped with the program is made (step 502). If DEFINE and DEPEND statements were not shipped with the program, these statements are created (step 504) by the user, typically a system administrator for



a distributed data processing system. DEFINE statements and DEPEND statements are needed for each shared file required by the program to be installed/configured. The process is then prepared to activate the DEFINE and DEPEND APIs (1 DEFINE API per DEFINE statement and 1 DEPEND API per DEPEND statement) for the client workstation. The client workstation is the computer in which the program is to be installed.

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L11: Entry 4 of 8

File: USPT

Jul 31, 2001

DOCUMENT-IDENTIFIER: US 6269339 B1

TITLE: System and method for developing and selecting a customized wellness plan

Application Filing Date (1):19981229Detailed Description Text (4):

FIG. 1 sets forth the opening interface processes of the present invention. Upon accessing the present invention, the user is presented with opening interface 102. At this point, the user can choose whether to learn more about the program through sales and demonstration 104, or begin the program 106. If the user is a current subscriber, the subscription is authenticated 108. If the user is not a current subscriber, the user is registered by initiating or renewing subscription 110, and payment is processed 112. After completion of subscription authentication 108 or subscription registration 110, the program proceeds to longevity metric high-level processes.

Detailed Description Text (7):

Personal profile characteristics include age, life style, habit/environment, medical and genetic information about a user. Personal profile characteristics are used to stratify a user into a correct relative probability group, personalize recommendations and educators, and provide information to system and business functions. In cases where the user knows the answer to a personal profile characteristic, he or she can directly enter the information. In some cases where a user does not know the answer to a personal profile characteristic, the user can answer a series of questions related to the personal profile characteristic in question, and the answer can be derived by the system; that is, the system can manipulate the input data into transformed data. For example, while the user might not know the number of kilocalories expended each week during exercise, by inputting the frequency, duration and intensity of the physical activities, the system can then determine the kilocalories expended using techniques known in the art. Personal profile characteristic business processes then perform operations on the user's answers to determine a personal profile characteristic value. Some business processes supported by personal profile characteristics are as follows: the personal profile characteristic can perform a calculation on user-entered numerical answers to derive a personal profile characteristic value; or the personal profile characteristic can evaluate user-entered data against conditional rules which point to an associated value. After the rules have been evaluated, the personal profile characteristic summarizes the values for each true rule into a composite score.

Detailed Description Text (54):

Referring to FIG. 17 A, the association of products with planner recommendations is shown. As noted earlier, planner recommendations 2402 arrives at recommendations for a given user based upon physiological age graphs, the system knowledge base, and other processes noted above. The planner recommendations create tables with selected recommendations noted in FIGS. 18-21 (further explain below). However, whether an individual user adopts a particular planner recommendation depends in part upon how the recommendation is implemented. For example, a particular individual may be more inclined to take a vitamin supplement than to run ten miles

per day. Thus the planner recommendations result in a number of selected factors 2502 from which the user can select. The selected factors are further linked to a factor database 2504. This factor database comprises information on products that can be purchased by a user and which directly affect the factor in question.

Detailed Description Text (57):

Alternatively, in the event that a user selects a particular factor to evaluate, the factor database will also contain a universal resource locator (URL) database 2508. This database would comprise Internet addresses for merchants that provide products associated with the factor being evaluated. The user could thus click on the factor noted in the factor database 2504, be taken to the appropriate URL address in the URL database 2508. Upon clicking on the Internet address, the user's browser would be launched and the user would be taken to the product or merchant database 2512 over the Internet 2510. In this fashion, the present invention either contains product information that can be directly provided to the user, or alternatively, the user could be taken directly to the Internet to the website of those merchants selling products that would assist the user in implementing the selected factors from the planning recommendations module 2502.

Detailed Description Text (59):

FIGS. 22, 23, 24 and 25 show examples of planner reports such as would be presented to the user upon proceeding to planner reports 2206. Referring to FIG. 22, a summary of the Wellness Plan created by the planner reports module 2206 is shown. This figure shows the choices of recommendations selected by the user, in this case to stop smoking, to reduce cholesterol, to reduce blood pressure, to take vitamin C, to take folate, and to take vitamin E. The figure further contains a block which the user can check to again see a summary of the products that are associated with the selected recommendations. Checking this block would give a further report to the user listing the contact information for those merchants that sell products and services to assist the user in the recommendations that are selected. For example, sources of folate would be identified as to the merchant, the URL associated with the merchant's website, an 800 number to contact for sales information, and other information that would assist the user in obtaining the products to support the user's choice of recommendations for lowering the user's physiological age.

Current US Original Classification (1):

705/2

Current US Cross Reference Classification (2):

705/3

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L11: Entry 3 of 8

File: USPT

Aug 7, 2001

US-PAT-NO: 6272467

DOCUMENT-IDENTIFIER: US 6272467 B1

TITLE: System for data collection and matching compatible profiles

DATE-ISSUED: August 7, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
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Low; Michael D.	Evanston	IL		
Stoller; Melissa K.	Kenilworth	IL		

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Spark Network Services, Inc.	Evanston	IL			02

APPL-NO: 08/ 784713 [PALM]

DATE FILED: January 16, 1997

## PARENT-CASE:

This application claims the benefit of U.S. provision application Ser. No. 60/024,789 filed Sep. 9, 1996, now abandoned.

INT-CL: [07] G06 F 15/38

US-CL-ISSUED: 705/1; 705/5, 705/26

US-CL-CURRENT: 705/1; 705/26, 705/5

FIELD-OF-SEARCH: 705/1, 705/26, 707/5

## PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

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<input type="checkbox"/>	<u>4348744</u>	September 1982	White	
<input type="checkbox"/>	<u>4422158</u>	December 1983	Galie	707/5
<input type="checkbox"/>	<u>5086394</u>	February 1992	Shapira	705/1
<input type="checkbox"/>	<u>5122952</u>	June 1992	Minkus	705/26

<input type="checkbox"/>	<u>5128871</u>	July 1992	Schmitz	364/490
<input type="checkbox"/>	<u>5164897</u>	November 1992	Clark et al.	705/1
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<input type="checkbox"/>	<u>5325475</u>	June 1994	Poggio et al.	395/133
<input type="checkbox"/>	<u>5446686</u>	August 1995	Bosnyak et al.	365/49
<input type="checkbox"/>	<u>5450504</u>	September 1995	Calia	382/118

ART-UNIT: 275

PRIMARY-EXAMINER: MacDonald; Allen R.

ASSISTANT-EXAMINER: Patel; Jagdish

ATTY-AGENT-FIRM: Lenart; Robert P. Eckert Seamans Cherin & Mellott, LLC

ABSTRACT:

This invention relates to an automated method for identifying matches between a set of predetermined traits and a set of preferences. This method can be used to find compatible matches in a variety of situations where participants are identified by a profile of traits and a set of criteria desired in a match, including, for example, matching candidates to residency program, and matching job hunters with employment opportunities. The present invention offers advantages and improvements over prior computer matching systems because, it provides an automated, effective method for matching traits with corresponding preferences and insures that only matches of the highest degree are made. The present invention utilizes two-way matching of selected criteria, which measures not only how compatible the potential match is with the desired traits of the user, but also how well the user fits the potential match's idea of the perfect match.

25 Claims, 12 Drawing figures

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L11: Entry 3 of 8

File: USPT

Aug 7, 2001

DOCUMENT-IDENTIFIER: US 6272467 B1

TITLE: System for data collection and matching compatible profiles

Application Filing Date (1):19970116Detailed Description Text (43):

The final process in computing the Basic Compatibility Score is to calculate a composite build score for the potential match at step 93. This score is based on a derivative variable called "build" which is based on a conversion of a profile's height and weight into a single variable using normative data. Build values are coded from 1 to 5 and correspond to small, medium, full, X-full, XX-full. The matching program 3 calculates the user's own build 46 by converting the value in the height 23 and weight field 22 of the user's trait profile 17 into a 1-5 build code using a matrix based on actuarial obesity tables. Using the same tables, the matching program 3 similarly calculates the potential match's own build 46 using the weight value 22 specified in the potential match's trait profile 17. A person skilled in the art will recognize that the ability of the invention to generate derivative variables has application outside the example illustrated in the preferred embodiment and can be used in other compatibility screening situations to increase the compatibility of matches. Thus, for example, a derivative variable called "health" could be calculated based on trait variables for age, weight, height, and whether\_smoker and used to increase matches between candidates and nursing home facilities. Similarly, a derivative variable called "class" could be calculated based on zip code, age to increase compatible matches between home buyers and residential neighborhoods.

Detailed Description Text (49):

In the embodiment illustrated in the drawings, the Basic Compatibility Score is the sum of the scores calculated for the location score 91, age range score 92, and composite build score 93. In another embodiment of the invention, the matching program 3 will weight these three scores before summing them based upon the ranking of importance assigned to the relevant characteristics by the user as stored in the preferences profile 18 (not shown). After computing the basic score, the matching program 3 goes on to compute an Adjusted Compatibility Score at step 75 based on the user's and potential match's profile records 16.

Detailed Description Text (79):

As already noted, the principles outlined in regard to the embodiment of the invention described in the text above can be applied to different sets of demographic/psychographic data to match potential employees with jobs (relying upon user and employer preference criteria such as work experience, skills, education, geographic preferences, company size, career track, etc.), candidates with residency positions, tenants with apartments, buyers with homes, and the like. Those skilled in the art will understand the ready transferability of the invention's technology, applied in the dating area, to such other matching applications. The artificial intelligence used in the invention in such applications will, of course, be based upon known or measured relationships from demographic or other studies. For example, in the case of an home finding service, information about geographic areas near to the user's preference may, be included

in the output, as well as information about more remote geographic areas with similar housing stock.

Current US Original Classification (1):

705/1

Current US Cross Reference Classification (2):

705/5

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L11: Entry 1 of 8

File: USPT

Jan 6, 2004

US-PAT-NO: 6675149

DOCUMENT-IDENTIFIER: US 6675149 B1

TITLE: Information technology project assessment method, system and program product

DATE-ISSUED: January 6, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ruffin; Michael	Calumet Park	IL		
Temple, III; Joseph L.	Hurley	NY		
Ordonez; Carlos A.	Poughkeepsie	NY		
Yan; Eva L.	Hyde Park	NY		
Preston; Allen H.	Poughkeepsie	NY		
Morrison; Timothy I.	Tillson	NY		

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE	CODE
International Business Machines Corporation	Armonk	NY				02

APPL-NO: 09/ 385936 [PALM]

DATE FILED: August 30, 1999

## PARENT-CASE:

CROSS-REFERENCE TO RELATED APPLICATION The present invention is a divisional of U.S. patent application Ser. No. 09/183,961 entitled "Method, System and Program Product For Evaluating The Business Solution Deliverables" by Temple et al, assigned to the present assignee and filed on Nov. 2, 1998 now U.S. Pat. No. 6,249,769. This patent application is incorporated herein by reference.

INT-CL: [07] G06 F 17/00

US-CL-ISSUED: 705/8

US-CL-CURRENT: 705/8

FIELD-OF-SEARCH: 705/7, 705/8, 705/10, 705/400, 705/29, 707/4, 706/51

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

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	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	<u>4887206</u>	December 1989	Natarajan	705/29
<input type="checkbox"/>	<u>5006998</u>	April 1991	Yasunobu et al.	364/513
<input type="checkbox"/>	<u>5276775</u>	January 1994	Meng	706/51
<input type="checkbox"/>	<u>5680305</u>	October 1997	Apgar	364/401R
<input type="checkbox"/>	<u>5724262</u>	March 1998	Ghahramani	702/186
<input type="checkbox"/>	<u>5745880</u>	April 1998	Strothmann	705/7
<input type="checkbox"/>	<u>5793632</u>	August 1998	Fad et al.	705/400
<input type="checkbox"/>	<u>5960417</u>	September 1999	Pan et al.	705/400
<input type="checkbox"/>	<u>5963939</u>	October 1999	McCann et al.	707/4
<input type="checkbox"/>	<u>6004015</u>	December 1999	Watanabe et al.	700/28

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
411184785	July 1999	JP	

## OTHER PUBLICATIONS

Stein, Tom; Not just ERP anymore; Dec. 1, 1997; Informationweek n659 pp: 18-24; dialog copy pp. 1-5.

ART-UNIT: 3629

PRIMARY-EXAMINER: Dixon; Thomas A.

ATTY-AGENT-FIRM: Ehrlich; Marc A. Gonzalez; Floyd A.

## ABSTRACT:

A method, system and program product for matching the an information technology enhancement project with the resource and priorities of an enterprise is presented herein. A set of objectives for the information technology resources is defined and prioritized as to their importance to the enterprise. The information technology resources for the enterprise are partitioned into segments along a predetermined common property such as geography or skill-base. Each segment is compared to a set of desire information technology characteristics and a score for each characteristic is assigned to each segment and summed providing a total characteristic score for each segment. The total characteristic score is weighted in light of the prioritized objects by virtue of a correlation created between the objectives and the characteristics. The weighted scores are ranked and then classified in accordance with a set of potential information technology enhancement projects to facilitate the selection of one or more of the projects.

11 Claims, 13 Drawing figures

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L11: Entry 1 of 8

File: USPT

Jan 6, 2004

DOCUMENT-IDENTIFIER: US 6675149 B1

TITLE: Information technology project assessment method, system and program product

Application Filing Date (1):19990830Detailed Description Text (4):

Initially, the provider will have a particular product or preferred solution which it will attempt to sell. The provider's representative, at this point, will attempt to discern an appropriate customer set with which to match the proffered solution 101. Once identified, the representative will engage a potential customer or customers, often by a mass or direct mail or telephone solicitation campaign, and describe the proffered solution 102. The customer will at this point provide feedback based upon his/her on-going IT requirements and it is at this point 103 determined whether the proffered solution matches the customers IT requirements. If there is a match the provider and customer engage in an ad-hoc series 104 of planning and implementation steps, the regimentation and automation of which are addressed in detail in the present invention.

Detailed Description Text (27):

The tool further provides an industry average of processing capacity per each server type 603 in terms of transactions per minute (TPM).

Detailed Description Text (34):

Referring back to the input steps 601a-601c it will be recalled that the user was prompted to provide the current and the projected data related to any of the number 601a, users 601b, or costs 601c per server type. The forward looking portion of this input in a preferred embodiment attempts to discern the changes in each server type over a five year period. The requirement for this information is premised upon the well-known notion that the cost associated with the hardware 601c1, software 601c2 and support 601c3 of a server platform each experience different variations over time. For example, for a given server type after an initial investment of acquisition capitol to purchase the bulk of the hardware, the hardware costs 601c1 can typically be expected to decrease rapidly over time, whereas the costs for personnel to support 601c3 the IT system increases markedly over time and the costs of software required to run the system 601c2 typically marginally increases over time.

Detailed Description Text (45):

The BSA core tool 803 utilizes the island data input to create an opportunity score 804 a for each island, as well as a related opportunity list for each island and a set of qualitative messages including tool-generated observations regarding each quantitatively scored island 804b. For instance, the core tool 803 may identify an attractive opportunity to implement an S/390 solution within an identified island, however the absence of any S/390 skill within that island would mean that the solution may either entail moving the workload to another island having the requisite hardware (or alternatively out-sourcing the workload), software and skill-base or selling the customer on establishing the required infrastructure within that island. The particular process implemented by the BSA core tool is subsequently addressed in FIG. 9.

Detailed Description Text (51):

Turning now to a more detailed analysis of the function of the CORE tool 803, FIG. 9 illustrates the flow for the performance of the operations previously described with regard to step 803. Step 901 illustrates the assignment of scores to the previously defined global IT objective information which is part of the island data input to the CORE tool and which has been generated as a result of the customer profiling step 802. The additional island-specific information generated as part of the profiling step 802 for each defined island (i.e., islands n-x for example) is scored in step 902n-902x. In this instance the global profile scores relate to customer objectives 901 such as cost reduction, Web enablement etc. whereas the scored island-specific metrics 902n-902x relate to characteristics of the particular defined IT boundary such as a scoring for the number of servers, skills associated with the S/390 platform, skill associated with the UNIX platform, experienced availability etc.

Detailed Description Text (63):

The results of each of the cost assessment tools is provided back to the database 404 in step 1007 as a "raw" cost for implementing the solution. The raw cost is devoid of certain financial modelling information such as the savings to be achieved by depreciation, the expense of inflation, the cost of loan-release financing, the cost of scrapping old equipment, or the income from selling or trading old equipment and environmental impacts. Each of these pieces of information is supplied either from data already stored in the database 404 or by user input into a financial modelling tool 1008 which serves to apply generally accepted accounting principles to the raw cost information so as to present an actual customer cost associated with the solution.

Detailed Description Text (69):

Upon entering the workload type 1101 it is determined whether a workload benchmark for determining requisite machine capacity is known for the particular workload 1102. For example, in the preferred embodiment it is determined whether the transactions per minute (Tpm) rating for the workload is known. The Tpm rating is typically derived from published Tpmc ratings which represent a transactions per minute rating achieved by running the Transaction Processing Council (TPC-C) benchmark. An excellent source of this and other benchmark which are well known to those skilled in the art may currently be provided by Ideas International Corporation.

Detailed Description Paragraph Table (2):

TABLE 2 Customer Profiling Questions: Account Related Information Date Company Name Company Sponsor Account No. Address Marketing Rep. Phone No. Customer Information Date Name Primary Contact Title Address Phone No. Business Priorities Top strategic Priorities over next year Issues/Challenges with current IT infrastructure Trending toward centralization/decentralization, why? No. of servers by platform Server growth rate Operational Costs IT budget Availability requirements Preferred platform for new apps Current H/W & S/W environment S/390 Hardware - CPUs DASD Tape S/390 Software - O/S Database subsystem Transaction monitors Security Storage management Key apps UNIX Hardware - CPUs DASD Tape UNIX Software - O/S Database subsystem Transaction monitors Security Storage management Key apps Network environment types O/S Database subsystem Transaction monitors Security Storage management Key apps

Current US Original Classification (1):

705/8

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L11: Entry 2 of 8

File: USPT

Feb 25, 2003

US-PAT-NO: 6526387

DOCUMENT-IDENTIFIER: US 6526387 B1 

TITLE: Method, system and program product for determining the value of a proposed technology modification

DATE-ISSUED: February 25, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ruffin; Michael	Calumet Park	IL		
Temple, III; Joseph L.	Hurley	NY		
Jayaram; Kristin R.	Fishkill	NY		
Morrison; Timothy I.	Tillson	NY		
Preston; Allen H.	Poughkeepsie	NY		

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE	CODE
International Business Machines Corporation	Armonk	NY			02	

APPL-NO: 09/ 386046 [\[PALM\]](#)

DATE FILED: August 30, 1999

## PARENT-CASE:

CROSS-REFERENCE TO RELATED APPLICATIONS The present invention is a divisional of U.S. patent application Ser. No. 09/183,961 entitled "Method, System and Program Product For Evaluating The Business Solution Deliverables" by Temple et al, assigned to the present assignee and filed on Nov. 2, 1998 now U.S. Pat. No. 6,249,769. This patent application is incorporated herein by reference.

INT-CL: [07] [G06 F 17/60](#)

US-CL-ISSUED: 705/7; 705/1, 705/37

US-CL-CURRENT: [705/7](#); [705/1](#), [705/37](#)

FIELD-OF-SEARCH: 705/7, 705/8, 705/10, 705/26, 705/400, 705/37, 700/28, 702/186, 706/51, 706/59

## PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

[Search Selected](#)[Search ALL](#)[Clear](#)

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	<u>4887206</u>	December 1989	Natarajan	705/29
<input type="checkbox"/>	<u>5006998</u>	April 1991	Yasunobu et al.	364/513
<input type="checkbox"/>	<u>5276775</u>	January 1994	Meng	706/51
<input type="checkbox"/>	<u>5680305</u>	October 1997	Apgar	364/401R
<input type="checkbox"/>	<u>5724262</u>	March 1998	Ghahramani	702/186
<input type="checkbox"/>	<u>5745880</u>	April 1998	Strothmann	705/7
<input type="checkbox"/>	<u>5793632</u>	August 1998	Fad et al.	705/400
<input type="checkbox"/>	<u>5960417</u>	September 1999	Pan et al.	705/400
<input type="checkbox"/>	<u>5963939</u>	October 1999	McCann et al.	707/4
<input type="checkbox"/>	<u>6004015</u>	December 1999	Watanabe et al.	700/28

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
411184785	July 1999	JP	

## OTHER PUBLICATIONS

Stein, Tom; Not just ERP anymore; Dec. 1, 1997; Informationweek n659 pp: 18-24; dialog copy pp. 1-5.

ART-UNIT: 3629

PRIMARY-EXAMINER: Dixon; Thomas A.

ATTY-AGENT-FIRM: Gonzalez; Floyd A. Ehrlich; Marc A.

## ABSTRACT:

A method, system and program product for determining the value to an enterprise of a proposed technology modification is presented herein. The information technology resources of an enterprise are partitioned into segments along any number of various lines such as business process, geography, etc. The partitioning creates one or more sets of partitioned segments. Within a given segment the resources are profiled in accordance with the information technology priorities of the enterprise and mapped against the complexity of the proposed modification to derive an opportunity score. The opportunity scores for the profiled segments are examined to determine if the partitioning has been effective and if not, the process is repeated. Once an effective partitioning has been effected the opportunity scores of the segments indicate a measure of the respective value of the proposed modification within each segment.

27 Claims, 13 Drawing figures

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L11: Entry 2 of 8

File: USPT

Feb 25, 2003

DOCUMENT-IDENTIFIER: US 6526387 B1

TITLE: Method, system and program product for determining the value of a proposed technology modification

Application Filing Date (1):19990830Detailed Description Text (4):

Initially, the provider will have a particular product or preferred solution which it will attempt to sell. The provider's representative, at this point, will attempt to discern an appropriate customer set with which to match the proffered solution 101. Once identified, the representative will engage a potential customer or customers, often by a mass or direct mail or telephone solicitation campaign, and describe the proffered solution 102. The customer will at this point provide feedback based upon his/her on-going IT requirements and it is at this point 103 determined whether the proffered solution matches the customers IT requirements. If there is a match the provider and customer engage in an ad-hoc series 104 of planning and implementation steps, the regimentation and automation of which are addressed in detail in the present invention.

Detailed Description Text (27):

The tool further provides an industry average of processing capacity per each server type 603 in terms of transactions per minute (TPM).

Detailed Description Text (34):

Referring back to the input steps 601a-601c it will be recalled that the user was prompted to provide the current and the projected data related to any of the number 601a, users 601b, or costs 601c per server type. The forward looking portion of this input in a preferred embodiment attempts to discern the changes in each server type over a five year period. The requirement for this information is premised upon the well-known notion that the cost associated with the hardware 601c1, software 601c2 and support 601c3 of a server platform each experience different variations over time. For example, for a given server type after an initial investment of acquisition capitol to purchase the bulk of the hardware, the hardware costs 601c1 can typically be expected to decrease rapidly over time, whereas the costs for personnel to support 601c3 the IT system increases markedly over time and the costs of software required to run the system 601c2 typically marginally increases over time.

Detailed Description Text (45):

The BSA core tool 803 utilizes the island data input to create an opportunity score 804a for each island, as well as a related opportunity list for each island and a set of qualitative messages including tool-generated observations regarding each quantitatively scored island 804b. For instance, the core tool 803 may identify an attractive opportunity to implement an S/390 solution within an identified island, however the absence of any S/390 skill within that island would mean that the solution may either entail moving the workload to another island having the requisite hardware (or alternatively out-sourcing the workload), software and skill-base or selling the customer on establishing the required infrastructure within that island. The particular process implemented by the BSA core tool is

subsequently addressed in FIG. 9.

Detailed Description Text (51):

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Detailed Description Text (63):

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Detailed Description Text (69):

Upon entering the workload type 1101 it is determined whether a workload benchmark for determining requisite machine capacity is known for the particular workload 1102. For example, in the preferred embodiment it is determined whether the transactions per minute (Tpm) rating for the workload is known. The Tpm rating is typically derived from published Tpmc ratings which represent a transactions per minute rating achieved by running the Transaction Processing Council (TPC-C) benchmark. An excellent source of this and other benchmark which are well known to those skilled in the art may currently be provided by Ideas International Corporation.

Detailed Description Paragraph Table (2):

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Current US Original Classification (1):

705/7

Current US Cross Reference Classification (1):

705/1

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L8: Entry 7 of 12

File: USPT

Mar 31, 1998

US-PAT-NO: 5734720

DOCUMENT-IDENTIFIER: US 5734720 A *1*

TITLE: System and method for providing digital communications between a head end and a set top terminal

DATE-ISSUED: March 31, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Salganicoff; Marcos	Philadelphia	PA	19130	

APPL-NO: 08/ 477798 [\[PALM\]](#)

DATE FILED: June 7, 1995

## PARENT-CASE:

CROSS-REFERENCE TO RELATED APPLICATIONS The present application is a continuation application of U.S. patent application Ser. No. 08/346,425, filed Nov. 29, 1994.

INT-CL: [06] [H04 N 7/167](#), [H04 L 9/00](#), [H04 K 1/00](#)

US-CL-ISSUED: 380/20; 380/21, 380/30, 380/44, 380/47

US-CL-CURRENT: [380/211](#); [380/239](#), [380/262](#), [380/282](#), [380/30](#), [380/44](#), [380/47](#)

FIELD-OF-SEARCH: 380/20, 380/30, 380/44, 380/47, 380/21

## PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

[Search Selected](#) [Search ALL](#) [Clear](#)

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	<a href="#">4694490</a>	September 1987	Harvey et al.	380/20
<input type="checkbox"/>	<a href="#">4704725</a>	November 1987	Harvey et al.	380/9
<input type="checkbox"/>	<a href="#">5003591</a>	March 1991	Kauffman et al.	380/10
<input type="checkbox"/>	<a href="#">5109414</a>	April 1992	Harvey et al.	380/9
<input type="checkbox"/>	<a href="#">5144663</a>	September 1992	Kudelski et al.	380/16
<input type="checkbox"/>	<a href="#">5155591</a>	October 1992	Wachob	358/86
<input type="checkbox"/>	<a href="#">5230020</a>	July 1993	Hardy et al.	380/21
<input type="checkbox"/>	<a href="#">5245420</a>	September 1993	Harney et al.	



<input type="checkbox"/>	<u>5341427</u>	August 1994	Hardy et al.	380/21
<input type="checkbox"/>	<u>5371794</u>	December 1994	Diffie et al.	380/30
<input type="checkbox"/>	<u>5455862</u>	October 1995	Hoskinson	380/21

## OTHER PUBLICATIONS

B. Schneier; Applied Cryptography; pp. 177-178; John Wiley & Sons, Inc.; Oct. 1993.  
B. Schneier; Applied Cryptography, Second Edition; pp. 32-34; John Wiley & Sons, Inc.; Oct. 1995.

ART-UNIT: 222

PRIMARY-EXAMINER: Buczinski; Stephen C.

ATTY-AGENT-FIRM: Woodcock Washburn Kurtz Mackiewicz & Norris LLP

## ABSTRACT:

A system and method for scheduling the receipt of desired movies and other forms of data from a network. Feedback paths are provided so that customer's profiles and/or the profiles of the video programs or other data may be modified to reflect actual usage. Secure digital communications between a video head end and a customer's set top terminal in the feedback path is provided by generating, at the video head end, a seed random number N for seeding a random number generator of the customer's set top terminal, encrypting seed random number N using a public key algorithm using a public key P of the video head end to yield encrypted seed random number E(N,P), sending the encrypted seed random number E(N,P) to the customer's set top terminal, decrypting the encrypted seed random number E(N,P) at the customer's set top terminal using a private key of the customer's set top terminal to yield seed random number N, generating a first number for each number i in a sequence K.sub.i at the customer's set top terminal and logically exclusive-ORing the first number in the sequence K.sub.i with a first data word in the decrypted data stream P.sub.i from the video head end, thereby forming a data stream C.sub.i, sending the result C.sub.i from the customer's set top terminal to the video head end, and decrypting C.sub.i to yield a decrypted P.sub.i by logically exclusive-ORing sequence K.sub.i with C.sub.i.

4 Claims, 11 Drawing figures

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L8: Entry 7 of 12

File: USPT

Mar 31, 1998

DOCUMENT-IDENTIFIER: US 5734720 A

TITLE: System and method for providing digital communications between a head end and a set top terminal

Application Filing Date (1):  
19950607Brief Summary Text (9):

The system described by Herz et al. in U.S. Pat. No. 5,351,075 partially addresses the above problems, at least with respect to the provision of movies over cable television. As described therein, members of a "Home Video Club" select the video programs they would like to see in the following week. A scheduling computer receives the members' inputs for the current week and determines the schedule for the following week based upon the tabulated preferences. This schedule is then made available to the members of the Home Video Club. If, when, and how often a particular video program is transmitted is determined by the customer preferences received by the scheduling computer. Prime time viewing periods are used to make certain that the most popular video programs are broadcast frequently and at the most desirable times. As with the aforementioned systems, the "Home Video Club" system does not automatically broadcast the most desired video programs to the customers but instead requires the active participation of the customers to "vote" for the most desired video programs for subsequent viewing.

Brief Summary Text (13):

For the reasons noted above, feedback regarding the customer programming and purchasing preferences is highly desirable. It is highly desirable to develop a technique for better acquiring and quantifying such customer video programming and purchasing preferences. Along these lines, Strubbe recently described a system in U.S. Pat. No. 5,223,924 which provides an interface for automatically correlating the customer preferences with the television program information and then creating and displaying a personalized customer program database from the results of the correlation. In the Strubbe system, the customer specifies whether he or she "likes" a particular video program and the database is updated accordingly. Then, from the video programs "liked" by the customer, a second, personalized, database is created. However, as with each of the systems described above, the Strubbe system does not develop customer profiles and automatically update the database of "liked" videos using feedback. Also, Strubbe does not teach that the preference information may be used to predict what new video programs the customer may like and then schedule those new video programs for viewing.

Brief Summary Text (17):

In accordance with the invention, a method of scheduling customer access to data from a plurality of data sources is provided. Although the technique of the invention may be applied to match customer profiles for such disparate uses as computerized text retrieval, music and music video selection, home shopping selections, infomercials, and the like, in the presently preferred embodiment, the method of the invention is used for scheduling customer access to video programs and other broadcast data. In accordance with the preferred method, objective customer preference profiles are obtained and compared with content profiles of the available video programming. The initial customer profiles are determined from

customer questionnaires, customer demographics, relevance feedback techniques, default profiles, and the like, while the initial content profiles are determined from questionnaires completed by "experts" or some sort of customer's panel, are generated from the text of the video programs themselves, and/or are determined by adopting the average of the profiles of those customers who actually watch the video program. Based on the comparison results, one or more customized programming channels are created for transmission, and from those channels, each customer's set top multimedia terminal may further determine "virtual channels" containing a collection of only those video programs having content profiles which best match the customer's profile and hence are most desirable to the customer during the relevant time frame.

Brief Summary Text (20):

In the presently preferred embodiment of the invention, the agreement matrix determining step comprises the step of comparing the customer profiles with the content profiles for each video program available for viewing in a predetermined time period. In particular, the agreement matrix determining step preferably comprises the step of determining a distance in multidimensional characteristic space between a customer profile and a content profile by calculating an agreement scalar for common characteristics,  $ac$ , between the customer profile,  $cv$ , and the content profiles,  $cp$ , in accordance with the relationship:

Brief Summary Text (21):

for  $i$ =a particular customer of a number of customers  $I$ ,  $j$ =a particular video program of a number of video programs  $J$ , and  $k$ =a particular video program characteristic of a number of video program characteristics  $K$ , where  $W_{sub.ik}$  is customer  $i$ 's weight of characteristic  $k$ . As will be appreciated by those skilled in the art, an agreement matrix so defined is the reciprocal of the distance  $d$  ( $=1/ac$ ) in multi-dimensional space between the customer profile vector and the content profile vector and that many different distance measurement techniques may be used in determining the distance  $d$ . In such an embodiment, the subset determining step preferably comprises the steps of sorting the video programs in an order of  $ac$  indicating increasing correlation and selecting as the subset a predetermined number of the video programs having the values for  $ac$  indicating the most correlation.

Drawing Description Text (13):

FIG. 11 is a simplified block diagram of a computer kiosk or personal computer which uses the profile and clustering techniques of the invention to assist a customer in the selection of videos for rental, music or books for purchase, and the like.

Detailed Description Text (8):

In accordance with the preferred embodiment of the invention, the content profiles describe the contents of video programs and are compared mathematically in a computer to customer profiles to generate an agreement matrix which establishes the degree of correlation between the preferences of the customer or customers and the video programming available during each video programming time slot. The content profiles and the customer profiles are thus described as a collection of mathematical values representing the weighted significance of several predetermined characteristics of the video programming. For ease of description, the present inventors will describe the mathematical basis for the content profiles and the customer profiles in this section and will describe the generation of the agreement matrix and the uses of the agreement matrix in the next section.

Detailed Description Text (108):

Given the weight matrix and the characteristic profiles of the customers and the programs, the agreement matrix may be calculated. For example, the agreement scalar between customer 1 and program 2 is: ##EQU5##

Detailed Description Text (111):

Of course, in the simple case where merely the presence or absence of particular characteristics are measured, the agreement matrix would look for identity in the most categories rather than the distance between the customer profile vector and the content profile vector using the techniques described above.

Detailed Description Text (169):

Thus far, the invention has been described in the context of a "filtering" system in which all of the video programming available at the head end is scheduled on "customized" channels in accordance with the customer profiles of customers and in which a subset of the programming on the "customized" channels available to each customer is selected using an agreement matrix for presentation to the customer as "virtual channels" tailored to that customer's characteristic profiles. However, one of the more interesting applications of the above-mentioned customer profile system is that the same customer profiling system may be used to provide feedback from individual customers regarding what characteristics they find most desirable in the broadcast shows. By obtaining this information, the customer profiles may be appropriately updated as described above. As will now be described, the video programming schedules also may be updated to reflect the customers' actual preferences, and information may be combined with the customer demographics and customer profiles to provide targeted advertising and targeted shop at home opportunities for the customer.

Detailed Description Text (241):

By using clustering techniques, one can also determine an initial customer profile even if no history of the customer's preferences is available. In particular, by clustering customers based on demographic or psychographic data, new customers may be assigned customer profiles typical of customers with similar demographics or psychographics. On the other hand, when no characteristics are known for movies or customers, an agreement matrix indicating which movies each customer is likely to watch may be computed from a record of which movies each customer has already watched. As described above, this agreement matrix can be used for selecting a set of virtual channels for each customer, for scheduling movies for delivery over a cable or equivalent transmission system, and for making movie rental or other rental or purchase recommendations at a kiosk or personal computer (described below). The key to generating the agreement matrix using this approach is the observation that if two people have liked many of the same movies or shows in the past, then they are likely to continue to like similar movies or shows. More precisely, if a person "A" has seen and liked many movies or shows which a second person "B" has seen and liked, then "A" is likely to like other movies or shows which "B" liked. The method set forth below generalizes this concept to multiple customers.

Detailed Description Text (265):

In the embodiments of FIGS. 5 and 6, the return path from each remote customer's multimedia terminal to the data collection mechanism at the CATV head end is preferably provided through the telephone network. Such techniques are currently employed in CATV systems for collection of the Pay-Per-View purchasing information to ascertain billing by customers. As in those systems, a telephone interface (FIG. 10) is provided at each customer location, which is, in turn, connected to the multimedia terminal's microprocessor to facilitate information transfer between the multimedia terminal's memory and the CATV head end. As will be described below with respect to FIG. 10, the memory of the multimedia terminal includes relevant profile information and/or specific viewing/purchasing detail records for any and all customer(s) at that remote customer location.

Detailed Description Text (295):

It has also been suggested above that clustering techniques may be used to provide a relatively homogeneous population with targeted advertising. What is significant about the invention in this context is that the agreement matrix may be updated

based on feedback including actual purchases made by the customer in response to such targeted advertising. For example, when shopping at home using infomercials, as when watching a movie, the products available for purchase can be characterized using different attributes and an agreement matrix formed between customer profiles and product profiles. The agreement matrix can also be used to select infomercials or other advertisements that the customer is most likely to watch and to respond to by making purchases. If purchase information is available, the customer profiles can be updated using the same algorithm described above with respect to video programs, but now the updating is based on what the customer actually purchased as well as what infomercials he or she watched.

Detailed Description Text (296):

The clustering method of the invention may also be modified to include sociodemographic profiles of customers. Such information may include ages, gender, and race, as well as other information provided by the customers themselves. On the other hand, the clustering data may include census data such as zip code data. For example, as noted above, a zip code may be used as one way to categorize the customer profiles of the customers whereby a new customer to a system would get one or more of a number of generic customer profiles for a particular zip code as his or her initial customer profile. The initial customer profile would then be modified as that customer's viewing habits are established. As noted above, such modifications may be accomplished using psychographic data, customer preference profiles input directly by the customer, past movie selections, rave reviews, passive feedback based on actual television viewing by that customer, records of customer purchases, and the like.

Detailed Description Text (304):

The methods of the invention also may be implemented in a kiosk or personal computer as illustrated in FIG. 11 for use in a video, music and/or book store to help customers decide which videos to rent or music and books to buy. The kiosk or personal computer would be similar in structure to the kiosk disclosed in U.S. Pat. No. 5,237,157 to Kaplan and would include a microprocessor 1102. However, a kiosk or personal computer implemented in accordance with the invention also accepts identity information from the customers either via keyboard 1104 or by electronic reading of a membership card by an electronic card reader (not shown) and retrieves customer profiles for that customer from memory 1106 for use in forming an agreement matrix as described above. Those skilled in the art will appreciate that, unlike the broadcast embodiment above, it is necessary in the kiosk embodiment to match the customer profiles to individuals by name or user ID rather than time slot. Such values are provided via keyboard 1104 or an electronic card reader so that the customer profiles for that customer may be retrieved.

Detailed Description Text (306):

The profiling technique of the invention also forms the basis for a customer to select a movie by example, as in a "rave review" described above. As described in Section V.B. above, since customers often do not have existing profiles, new customers may create an initial customer profile by selecting one or movies which are similar to what he or she is looking for so that the profiles of these sample movies may be looked up and averaged to provide a customer profile. This customer profile is used in combination with a standard set of weights to establish the importance of the characteristics to generate an agreement matrix indicating how much the customer should like each movie which is now available. The 3 to 5 movies (or 10 movies) with the highest agreement (maximum value for ac) are then presented to the customer via video processor 1108 for display on display device 1110 along with brief descriptions. As above, movies can be excluded which the customer has recently rented. As shown in FIG. 11, a CD ROM player 1112 may also be provided at the kiosk to facilitate the playing of short "clips" of the movies with the highest agreement to further assist the customer in his or her final selection.

Detailed Description Text (309):

Music kiosks and book kiosks could also be used in music and/or book stores to aid in the selection of music or books for purchase. Unlike the kiosks described in the Kaplan '157 patent, however, the kiosks would allow potential purchasers to look up music or book selections by example and would match the customer's preferences to the characteristics of the available inventory. The potential buyer could listen to segments of those music selections or review the summaries and reviews of those books with the highest agreement to the customer profile created from the sample music or book selections.

Detailed Description Text (313):

In the case of retrieving stock market data from a computer network, response times for retrieving certain stock market data can be shortened by anticipating which menu selections the customer is likely to use and downloading that information in anticipation of its likely use. One particularly useful example of this would be the retrieval of information about stocks such as recent trade prices and volumes. Since stocks, like movies, can be characterized in multiple ways, such as by industry, dividend size, risk, cost, where traded, and the like, profiles of stock may be developed in a similar manner to that described above. The stocks also can be characterized by whether they are owned by the customer and by whether they have exhibited unusual recent activity. These characteristics can be used to create profiles and agreement matrices using the identical techniques described above. In addition, if a customer exhibits a pattern in their request for information about stocks, their requests can be anticipated and menus assembled to ease selection of the stocks so as to avoid potentially long searches through multiple windows, or the information can be downloaded in advance of the customer's request to reduce waiting time. Such anticipation of customer requests for information is particularly useful when the waiting time may be significant, as for multimedia information incorporating graphical or auditory information. It is also valuable when large amounts of information can be transferred at lower cost, for example, using lower cost transmissions at night in anticipation of requests for information the following day.

Detailed Description Text (315):

Also, media cross-correlation is also possible using the techniques of the invention by using the profile from one media to estimate the customer preference for another media. Such an approach might be useful, for example, to predict that an avid customer of sports programs could also be very interested in obtaining sports or news information or information regarding the purchase of sports memorabilia based on his or her viewing preferences. Likewise, listeners of a particular type of music may also be interested in purchasing concert tickets for the same or similar types of music.

Detailed Description Text (316):

Finally, the techniques of the invention may be used to match a potential purchaser to real estate on the market by creating profiles of the characteristic features of a house such as size, location, costs, number of bedrooms, style, and the like. The potential purchaser can request his or her "dream home" by giving example houses, by specifying desired characteristics such as range of prices, or by a combination of the two. The agreement matrix would match the customer's profiles to the profiles of the available homes and create an agreement matrix. The system could also verify that the profiles initially entered by the potential purchasers are accurate by suggesting houses of a somewhat different type than those the customer has requested. A house retrieval system which is customer controlled could also be developed using the techniques of the invention. In this example, the data source would be the standardized real estate listings.

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